

REMARKS

Claims 16-28 are pending in this application and stand rejected. Claims 17-19, 21 and 27 have been amended. Claims 16-20 and 25 are independent.

The proposed changes to the claims are set forth in the annexed sheet entitled "Version Marked to Show Changes Made". Applicants have also annexed a "Clean Copy of All Claims" for the Examiner's convenience.

The Objection to The Drawings

The drawings were objected to on grounds that the recitation "wettability" lacks antecedent basis.

Given that the term "wettability" is not used in any of the drawings, it is not believed that this objection is well-taken. Rather, since the term "wettability" is used in claim 16, it is thought that the Examiner meant to object to the drawings as failing to depict a claim feature.

If that is the case, then Applicants submit that the term "wettability" refers to a physical property like weight or density, not a physical structure, and so cannot be depicted in the drawings. Clearly, the Examiner will agree that the drawings in an application having a claim which recites the weight of an object will not be able to depict that weight.

In any event, the specification provides ample support for the use of the term "wettability", for example, in the last full paragraph at page 9.

For all the foregoing reasons, favorable reconsideration and withdrawal of this objection are respectfully requested.

**The Objection to
the Specification**

The specification was objected to on grounds that the recitation "between more than 20° C" in claim 19 lacked antecedent basis in the specification.

Claim 19 has been revised to change the expression "between more than 20° C" to --more than 20° C--. The amended language is supported in the first paragraph on page 21 of the specification.

Accordingly, favorable reconsideration and withdrawal of this objection are respectfully requested.

**The Rejection Under
35 U.S.C. § 112, ¶ 2**

Claims 21 and 27 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the Applicants' invention. In particular, the Examiner took the position that the term "pallet" was vague and indefinite because it did not relate back to the recitation "pallet" as used in claims 20 and 25.

Claims 21 and 27 have been carefully reviewed and revised to clarify that the recited pallet is the same as that introduced in base claims 20 and 25.

For all the foregoing reasons, favorable reconsideration and withdrawal of this rejection are earnestly solicited.

The Rejection Under
35 U.S.C. § 102

Claims 20-28 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,790,158 to Shinada et al. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

Claims 20 and 25, and claims 21-24 and 26-28 dependent respectively thereon, involve a process for manufacturing an ink cartridge by depressurizing the ink cartridge twice, once before the ink is injected into the foam chamber, the other, after the ink has been filled into the cartridge. The second depressurization step of claim 25 is set forth as the bag is sealed in a vacuum environment. In contrast, Shinada only teaches that the ink is filled into the cartridge under low pressure. Shinada's teaching of filling a cartridge with ink under low pressure in no way even suggests the claimed invention, which first depressurizes the foam chamber before the ink is introduced, and which depressurizes the foam chamber a second time after the ink has filled the chamber.

Under § 102, an invention can only be anticipated by a reference which identically discloses every feature of the claimed invention. In re Bond, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990); see also Atlas Powder co. v. E.I. DuPont de Nemours & Co., 750 F.2d 1569, 1574 (Fed. Cir. 1984). Accordingly, Shinada does not anticipate Applicants' invention because it does not disclose depressurizing the ink cartridge twice, once before the ink is injected into the foam chamber, the other, after the ink has been filled into the cartridge.

For all the foregoing reasons, the claimed invention is neither disclosed in nor suggested by the cited art. Accordingly, favorable reconsideration and withdrawal of this rejection are respectfully requested.

The Rejections Under
35 U.S.C. § 103

Claim 16 was rejected under 35 U.S.C. § 103 as being unpatentable over Shinada in view of U.S. Patent No. 5,482,660 to Yamamoto. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

Claim 16 is directed to a process for manufacturing an ink cartridge, in part, by treating the ink supply port inlet with ultraviolet radiation to improve the treated portion's wettability. Ink flows from the cartridge, through the ink supply port, to the ink jet head. In contrast, the applied Yamamoto patent teaches changing the wettability of the ejection orifice through which ink leaves the recording head and travels toward the recording medium. The structure of the recording head outlet of Yamamoto is very different from, and not properly compared to, the claimed supply port inlet of the cartridge. Yamamoto in no way suggests at least the aspects of the present invention involving modifying the wettability of the ink supply port through which ink leaves the ink tank to travel to the ink jet head, but rather, changing the wettability of the ink ejection orifice.

For all the foregoing reasons the claimed invention is not suggested by the prior art. Accordingly, favorable reconsideration and withdrawal of this rejection is respectfully requested.

Claims 17-19 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,814,786 to Hoisington et al. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

Claims 17-19, as amended, describes a method for manufacturing an ink cartridge, in part, by heating ink as it is injected into the ink cartridge. The ink is a liquid at room temperature, meaning the ink is liquid even when heat is not applied. Hoisington, in

contrast, is concerned with a "hot-melt" type ink jet head in which the ink used is solid at room temperature and is contained in a heated ink tank 28 (such ink solidifies when heat is not applied). Further, during recording the heated ink is transferred to an intermediate reservoir 12 located on the carriage. Nowhere does this reference even suggest the aspects of the claimed invention relating to filling a cartridge with heated ink that is normally liquid at ambient temperature as part of the process for manufacturing the cartridge. In fact, Hoisington teaches the opposite of the present invention, since the ink leaving the heated tank 28 cools as it travels to reservoir 12. Moreover, the heated ink tank 28 and reservoir 12 of Hoisington, used in normal operation, are not analogous, and may not be properly compared to the ink cartridge manufacturing method of claims 17-19, whereby an ink cartridge is filled with ink before use. The structures claimed, and those of the cited reference are not properly compared.

For all the foregoing reasons the claimed invention is not suggested by the prior art. Accordingly, favorable reconsideration and withdrawal of this rejection is respectfully requested.

CONCLUSION

Applicants respectfully submit that this application is in condition for allowance.

Early and favorable action is earnestly solicited.

Respectfully submitted,

David J. Schaeffer

Reg. No. 32,716

Lawrence Rosenthal

Registration No. 24,377

Attorney for Applicants

STROOCK & STROOCK & LAVAN, LLP

180 Maiden Lane

New York, New York 10038-4982

(212) 806-5400

VERSION MARKED TO SHOW CHANGES MADE:



Please amend claims 17-19, 21 and 27 as follows:

17. (Amended) A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of at least approximately 10 C° above the ambient temperature of the ink, the ink being a liquid even when unheated.

18. (Amended) A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of between approximately 10 C° and 20 C° above the ambient temperature of the ink, the ink being a liquid even when unheated.

19. (Amended) A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of [between] more than 20 C° above the ambient temperature of the ink, the ink being a liquid even when unheated.

21. (Amended) The method of claim 20, wherein, prior to inserting the packing member, the container is positioned on [a] the pallet such that the first wall faces upward away from the top of the pallet, and after inserting the packing member, resetting the container body on the pallet by turning the container body upside down such that the opening faces upward and the first wall faces the pallet.

27. (Amended) The method of claim 25, wherein, prior to inserting the packing member, the container is positioned on [a] the pallet such that the first wall faces upward away from the top of the pallet, and after inserting the packing member, resetting the container body on the pallet by turning the container body upside down such that the opening faces upward and the first wall faces the pallet.

CLEAN COPY OF ALL CLAIMS:

Please amend claims 17-19, 21 and 27 as follows:

16. A method of manufacturing an ink cartridge having an ink supply port, having an inlet, formed in the container body, for use in an ink jet recorder, comprising the step of treating at least a portion of the ink supply port inlet with ultraviolet radiation to improve the wettability of the treated portion.

17. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of at least approximately 10 C° above the ambient temperature of the ink, the ink being a liquid even when unheated.

18. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of between approximately 10 C° and 20 C° above the ambient temperature of the ink, the ink being a liquid even when unheated.

19. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of heating ink while it is being injected into the ink cartridge, to a temperature of more than 20 C° above the ambient temperature of the ink, the ink being a liquid even when unheated.

20. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of

providing a container body having a first wall and a plurality of walls extending upwardly therefrom to define an opening spaced from the bottom wall on a pallet, the container body including a chamber for accommodating a porous member therein, and an ink supply port, having an inlet formed in the bottom surface of the chamber and an outlet;

inserting a packing member into the ink supply port and then sealing the ink supply port outlet;

inserting a porous member into the foam chamber;

bonding a cover to the opening of the container body;

injecting ink into the foam chamber;

depressurizing the ink cartridge a first time;

sealing a portion of the cover after the first depressurizing step and then depressurizing the ink cartridge a second time; and

sealing the remainder of the cover after the second depressurizing step.

21. The method of claim 20, wherein, prior to inserting the packing member, the container is positioned on the pallet such that the first wall faces upward away from the top of the pallet, and after inserting the packing member, resetting the container body on the pallet by turning the container body upside down such that the opening faces upward and the first wall faces the pallet.

22. The method of claim 20, comprising the step of affixing a filter to the ink supply port inlet.

23. The method of claim 20, wherein the ink cartridge is depressurized to approximately 200 mm Hg below atmospheric pressure during the second depressurization step.

24. The method of claim 20, comprising the steps of inserting the container body into a bag having an opening and sealing the bag opening in a vacuum environment.

25. A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the step of

providing a container body having a first wall and a plurality of walls extending upwardly therefrom to define an opening spaced from the bottom wall on a pallet, the container body including a foam chamber for accommodating a porous member therein, and an ink supply port, having an inlet formed in the bottom surface of the foam chamber and an outlet;

inserting packing into the ink supply port and then sealing the ink supply port outlet;

inserting a porous member into the foam chamber;

bonding a cover to the opening of the container body;

injecting ink into the foam chamber;

depressurizing the ink cartridge;

sealing the cover after depressurizing the ink cartridge;

inserting the sealed container body into a bag having an opening; and

sealing the opening of the bag in a vacuum environment.

26. The method of claim 25, wherein the bag opening is sealed in a vacuum environment within approximately 72 hours after the second depressurization step.

27. The method of claim 25, wherein, prior to inserting the packing member, the container is positioned on the pallet such that the first wall faces upward away from the top of the pallet, and after inserting the packing member, resetting the container body on the pallet by turning the container body upside down such that the opening faces upward and the first wall faces the pallet.

28. The method of claim 25, comprising the step of affixing a filter to the ink supply port inlet.